WHAT IS CLAIMED IS:

1.   A method for analyzing a circuit with transmission lines, comprising the steps of:

based on coupling factors, determining which sources

5   influence each of a plurality of transmission lines;

computing transmission line parameters based on the sources which influence each transmission line;

analyzing a transient or frequency response for each transmission line by segmenting each line to perform an

10   analysis on that line; and

repeating the step of analyzing using waveforms determined in a previous iteration until convergence to a resultant waveform has occurred.

15   2.   The method as recited in claim 1, wherein the step of determining which sources influence each of a plurality of transmission lines includes calculating coupling factors for each transmission line based on neighboring sources.

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3.   The method as recited in claim 1, further comprising the step of modeling the transmission lines in terms of voltage and/or current sources.

4.   The method as recited in claim 3, wherein the step of modeling includes employing lumped models.

5.   The method as recited in claim 3, wherein the step of modeling includes employing method of characteristics models.

6.   The method as recited in claim 1, further comprising the step of performing an analysis of the transmission lines based on an electronic form of an electrical circuit.

7.   The method as recited in claim 1, further comprising the step of scheduling an order for analyzing the transmission lines.

8.   The method as recited in claim 7, wherein the order includes analyzing aggressor lines before victim lines.

9.   The method as recited in claim 7, wherein the order includes analyzing lines in a neighbor-to-neighbor sequence.

10. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for analyzing a circuit with transmission lines, as recited in claim 1.

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11. A method for analyzing a circuit with transmission lines, comprising the steps of:

determining coupling factors for a plurality of transmission lines;

10   based on the coupling factors, eliminating sources which influence a transmission line less than a threshold amount;

computing transmission line parameters based on the sources which influence each transmission line;

15   representing each line as a coupling model to describe the line;

analyzing a transient response for each model of a transmission line by segmenting each line to perform an analysis on that line; and

20   repeating the step of analyzing using waveforms determined in a previous iteration until convergence to a resultant waveform has occurred.

12. The method as recited in claim 11, wherein the step of representing each line as a coupling model includes modeling the transmission lines in terms of voltage and/or current sources.

13. The method as recited in claim 12, wherein the step of modeling includes employing lumped models.

14. The method as recited in claim 12, wherein the step of modeling includes employing method of characteristics models.

15. The method as recited in claim 11, further comprising the step of performing an analysis of the transmission lines based on an electronic form of an electrical circuit.

16. The method as recited in claim 11, further comprising the step of scheduling an order for analyzing the transmission lines.

17. The method as recited in claim 16, wherein the order includes analyzing aggressor lines before victim

lines.

18.   The method as recited in claim 16, wherein the

order includes analyzing lines in a neighbor-to-neighbor

5   sequence.

19.   A program storage device readable by machine,

tangibly embodying a program of instructions executable by

the machine to perform method steps for analyzing a circuit

10   with transmission lines as recited in claim 11.

20.   A system for analyzing an electrical circuit, the

electrical circuit having two or more coupled lines, the

system comprising:

15   one or more circuit models;

     a transmission analysis program that selects or

rejects aggressor lines based on a coupling factor value

determined relative to one or more victim lines; and

     a   solver   that   performs   a   circuit   analysis   on   the

20   circuit   model   using   the   victim   lines   and   the   selected

aggressor lines but not the rejected aggressor lines.

21.   The   system   as   recited   in   claim   20,   wherein   the

victim lines are adjacent to one or more of the selected

aggressors.

22. The system as recited in claim 20, wherein the

transmission analysis program performs the steps of:

determining a propagated signal for each of the

selected aggressor lines;

monitoring a coupling of the propagated signal on a

first victim line for each of the selected aggressor lines;

monitoring a coupling of the victim line couple signal

on one or more second victims;

comparing the victim line couple signal to a previous

victim line couple signal on the respective victim; and

repeating until the step of comparing meets a

comparison criterion.